

AMPLIFIERS & MOUNTS

FAMILY OF PRODUCTS OVERVIEW
FROM ULTRALIFE



ULTRALiFE®

ULTRALIFE CORPORATION serves its markets with products and services ranging from power solutions to communications and electronics systems. Through its engineering and collaborative approach to problem solving, ULTRALIFE serves government, defense and commercial customers across the globe.

Headquartered in the USA, the company's business segments include: Battery & Energy Products and Communications Systems. ULTRALIFE has operations in North America, Canada, Europe and Asia.

ULTRALIFE

20W & 75W MULTIBAND AMPLIFIERS & MOUNTS

MOUNTED AND DISMOUNTED

ULTRALIFE has developed a family of combat proven tactical communication equipment, to meet the LOS and SATCOM requirements and demands of dismounted close combat soldiers, vehicle-based soldiers, signals platforms, JTAC and special forces. The innovative solutions provided by the Communications Systems engineering team factor in concerns of size, weight, and power (SWaP) heavily in their design.



YOUR NUMBER ONE PARTNER FOR MILITARY COMMUNICATION

TRUSTED BY GOVERNMENTS & OEMS ACROSS THE GLOBE

SERVING THE MISSION

ULTRALIFE works with clients in mission critical fields (such as military, medical, industrial, safety and security) where failure is not an option.



INTRODUCTION

For over 15 years, ULTRALIFE has been manufacturing both dismantled and vehicle-mounted amplifiers to serve a wealth of military radio and other communication needs.

To reduce the soldier's burden; consideration for size, weight and power is paramount and ULTRALIFE has designed its equipment to be ergonomically simple, robust, radio agnostic and enduring.

Get an overview of our product range below or scan the QR-Codes to visit the relevant web page(s) and view technical specifications.

Numbers in superscript are used to mark important product details.

DISMOUNTED AMPLIFIER



ULTRALIFE's A-320V3A is a radio agnostic 20W amplifier designed to serve the extended 30-512 MHz frequency range used by modern radios. The A-320V3A features self-diagnostics with dimmable system indicators to monitor power and performance status. It also supports the latest TDMA waveforms including Soldier Radio Waveform (SRW), Advanced Networking Wideband Waveform (ANW2®), and an Enhanced Position & Location Reporting System (EPLRS). The amplifier maintains support for legacy communications modes including HAVEQUICK, SINGGARS, and DAMA.



It can be vehicle mounted in the A-320HVA or A-320QM (see page 5) or LPAS-320U (page 6).

LNA ADAPTER (MULTIBAND)

If there is a requirement for multiband operation, then the A-320DPA can be used. It simply clips (no tools required) onto the A-320V3A for dual port capability. The adapter allows for simultaneous connection of two separate RF antennas for differing frequencies. It also functions as

a Low Noise Amplifier (LNA) for UHF SATCOM transmission - providing approximately 10dB of gain. A-320DPA works with AN/PRC-148, AN/PRC-152, AN/PRC-154 and MBITR II radios.



COMBINER

A-301-150 satellite radio combiner (diplexer) enables simultaneous transmission and reception of any two military UHF satellite radio channels (in the 243 – 318 MHz SATCOM band) on a single antenna.

Designed for continuous operation in tactical environments, the A-301-150 is packaged in a compact rugged, weatherproof housing. This allows it to be used everywhere from fixed site locations to boats, aircraft, vehicles, shelters, and racks.

The A-301-150 is ideal for SATCOM on the Move (SOTM) requirements where limited antenna availability may hinder operations (such as in maritime surface craft, vehicles, aircraft, and submarines). The satellite radio combiner incorporates extensive transmit and receive filtering to ensure no performance degradation in either channel during simultaneous transmit and receive operations.



Multiple modes of operation provide users with flexibility while configuring communications networks. The A-301-150 also allows users to interface their own RF power amplifiers (up to 150 watts per channel).



MOUNTED AMPLIFIER



Today's high duty-cycle waveforms and extreme environmental deployment areas demand a level of thermal performance that few amplifiers can meet. The A-7500 is a high-performance amplifier that uses advanced thermal techniques and materials to deliver outstanding thermal performance and ultra-fast processing of modern waveforms.

The A-7500 maintains a wide range of compatibility with today's complex waveforms including SRW, EPLRS, ASCM, SINGGARS, HAVEQUICK, DAMA, IW, and other TDMA waveforms.

ULTRALIFE's significant focus on tactical satellite operations has resulted in the A-7500's great adjacent channel power performance and filtering coupled with a 10dB gain low noise figure. The A-7500 is ideal for SATCOM-on-the-Move (SOTM) applications.



RADIO CHARGER & MOUNT



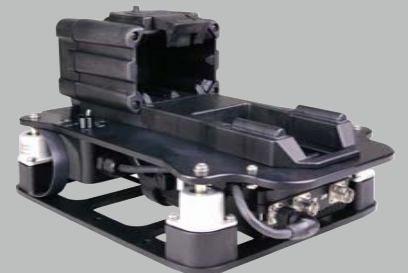
MRC-UVA-V1 is a handheld radio charging solution for vehicle communications. It is compatible with new radios (such as Harris PRC-163, IMBITR, MBITR2, ViaSat PRC-161 and Tactical Network Rover), as well as legacy Harris and Thales radios (plus other radios and devices using the same batteries). It can be used in tactical or non-standard vehicles to provide radio mounting and



charging. Input voltage: 11-36VDC (215W max)

RADIO & AMPLIFIER MOUNT

A-320HVA is designed for "jerk-and-run" scenarios and utilizes the same radio mounting pocket as the MRC-UVA. However, it also allows an amplifier¹ (sold separately) to be mounted. It can be used in tactical or



non-standard vehicles and operate from any 11-36V DC power supply. An amplified speaker can also be mounted (such as the MRC-67A, see page 6) to provide an audio interface. Input voltage: 11-36VDC (215W max)

AMPLIFIER MOUNT



A-320QM can be quickly and easily mounted to the A-320V3A amplifier² (sold separately, see page 4) and legacy ULTRALIFE amplifiers.

Lightweight (under

11lb. without amp), A-320QM is adaptable to most military vehicles and base stations. Its coiled steel isolators and nylon amp holder³ (with steel reinforcement) meet or exceed MIL-STD-810G⁴ standards (*shock/vibration).



RADIO & AMPLIFIER

LPAS-320U is a self-contained AC/DC radio and amplifier solution for vehicle or dismantled use. Its versatility and low weight (5.9Kg or 13lbs) allows it to be dismantled for use in FOB, safe houses and HQ.

LPAS-320U includes the A-320V3A amplifier and universal radio pocket.

It can be powered by either the MRC-93 (using AC/DC input power or an optional battery) or MRC-82A (which uses ULTRALIFE's rechargeable UBI-2590 batteries, see page 7). An internal charger allows the MRC-82A to recharge the battery while the transceiver is operating.



SPEAKER



MRC-67 series amplified speakers are rugged, waterproof audio speaker systems made to withstand tactical environments. The MRC-67 series will monitor a single transceiver and/or encryption unit.

They are compatible with virtually any communication systems using the standard transceiver interface audio connections. A variety of power input configurations and colors⁵ are available.

The MRC-67 series is ideal for tactical operations centers, SOTM systems, and vehicle use. The speaker's rugged construction allows for audio monitoring in demanding tactical environments. (⁵Available in green, black, gray or red)



POWER SUPPLY

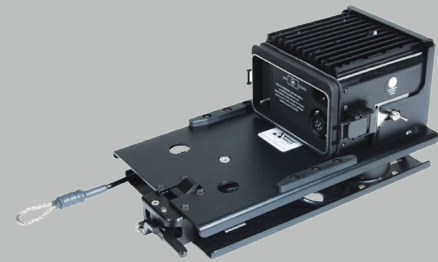
The MRC-UPU0003 power supply has been designed to work with the AN/PRC-117G radio. The two can be connected easily using the MRC-RMT0003⁶ (⁶sold separately, see 'Radio & Power Mount').

Virtually any AC or DC power source is compatible with this power supply, making it an ideal solution for providing uninterrupted power, anywhere.

When used with the AN/PRC-117G at an 8:1:1 duty cycle, the unit provides greater than 3 hours run time. Like all ULTRALIFE power supplies, this series is 85-250VAC/47-440 Hz ready and complies to MIL-STD-461E (for EMI) and MIL-STD-810 standards. Optional cables⁷ are available to extend application flexibility (⁷see website).



RADIO & POWER MOUNT



The MRC-RMT0003 allows for easy installation of the AN/PRC-117G radio and ULTRALIFE MRC-UPU0003⁸ (⁸sold separately, see 'Power Supply'). This combination can be used in vehicles, HQ and fixed-site installations.

MRC-RMT0003 is equipped with an integrated security cable to lock the radio and MRC-UPU0003 to a mount.

The MRC-RMT0003 integrated shock/vibration mount protects equipment from shock and vibration with integrated isolators between the bottom mounting plate and equipment mounting tray.

The MRC-RMT0003 features a quick-release latch that can be operated with one hand, making it ideal for "jerk-and-run" situations.



ULTRALIFE[®] BATTERY & ENERGY PRODUCTS



POWER YOUR COMMS SYSTEMS (see page on the right)

BATTERIES FOR COMMUNICATION SYSTEMS

RECHARGEABLE

NON-SMART

Referred to as the UBI-2590 core variant by its users; UBBL02-01 is a rechargeable Lithium-ion xx90 battery that contains two independent battery sections, which can be connected in either series or parallel by the end use device. In 30V 'series mode' the battery operates between 33.6V and 20.0V (28.8V average) and delivers 8.7Ah. In 15V 'parallel mode' the battery operates between 16.8V and 10.0V (14.4V average) and delivers 17.4Ah; making the UBBL02-01 a 250Wh battery!



UBBL02-01 is used in military communications devices including AN/PRC-117G, AN/PRC-117F, AN/PRC119 and AN/PSC-5D.

SMART



The UBBL10-01 is the same battery as UBBL02-01 but with the addition of ULTRALIFE's SmartCircuit™ technology that allows compatible devices and chargers to communicate with the battery via its SMBus v1.1 compliant interface.

UBBL10-01 is used in AN/PRC-117G, AN/PRC-117F, AN/PRC119, AN/PSC-5D & more.



SMART (ENERGY DENSE)

The UBBL13-01 is the highest energy density offering available in the UBI-2590 product family.

When the battery is configured by the end use device in a parallel mode (or 14.4V output), the user has access to 20Ah of discharge capability. Series mode connections result in a 28.8V (average) output or 288Wh of useable energy! This is all possible without changing the dimensions or physical construction of the UBBL10-01 battery.



NON-RECHARGEABLE

ORIGINAL BA-5390/U



ULTRALIFE's UB0023 battery is a lithium manganese dioxide chemistry based battery designed in accordance with the U.S. military performance specification 49471/1.

This battery offers approximately 50% more capacity (22Ah) than a BA-5590 lithium sulfur dioxide battery (15Ah) which remains popular within the armed forces to this day.

Unlike BB-5590's, which have a liquid cathode, our UB0023 utilizes a solid cathode, resulting in a safer overall cell. The UB0023 battery has two independent battery sections that can output 15V (in parallel configuration) or 30V (in series).



SHORT FORMAT

The UB0031 is a short format version of the xx90; virtually cutting the batteries height in half for portability and retrofits.



The UB0031 has the same state-of-charge indicator, electrical



interface and complete discharge device as the UB0023, except the UB0031 has a single battery section (making it operational with only a 15V output).

The battery utilizes ULTRALIFE's CFx/MnO₂ hybrid chemistry.

DUAL VOLTAGE



For a higher energy density solution (like UB0031) but dual voltage output (like UB0023), ULTRALIFE offers the UB0032.

It has roughly 50% more capacity (32Ah) than our UB0023 battery (22Ah), and over twice the capacity of a BA-5590 sulfur dioxide battery (15Ah). It can replace BA-5390 and

BA-5590 in radio comms and missile targeting systems (low load).



NOTE: CASE COLOR MAY CHANGE AT ANY TIME SOLELY AT THE DISCRETION OF ULTRALIFE CORPORATION.



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